The High School

Ninth and Tenth Grades

Latin, Eighth and Ninth Grades: (KATHARINE M. STILWELL.) The class will continue reading the Helvetian War. They have made relief maps of Gaul, and of the Helvetian plateau. These maps will be further used to trace the route taken by the Helvetians, and to locate the events mentioned in the text.

The class will trace the route through the country of the Sequani, between the Jura and the Rhone, and will discuss the effect of this movement upon the Roman province:

1. The Rhone River as a protection.
2. No armed force in that part of the province.
3. The feeling of the Sequani and the Aedui toward the Romans.
4. Influence of Ariovistus.

This will enable the pupils to put themselves in Caesar's place, to consider the various moves possible, and to decide which move would be of the greatest advantage to the Romans.

They will then follow the Helvetians from the plateau down the Rhone valley to the left bank of the Saone, where the Tigurine were destroyed. The building of the bridge at this point will offer an opportunity for an investigation of Caesar's methods.

The events in this valley will be noted, the class presenting as dramatically as possible the speeches made in the conference between Caesar and Divico.

The line of march of the two armies will be followed north through the Burgundian plains up the right bank of the Saone to Macon, which will be considered the point of departure from the river valley. (This route is to the west of the railroad running between Dijon and Macon.)

The skirmish which took place on this march will show the weakness of Caesar's cavalry, while the trouble with the Aedui will enable the class to discover Caesar's habits in regard to his base of supplies and his treatment of his soldiers. On this latter point a comparison will be made between Caesar and Napoleon.

The course through the hills to the region south of Bibracte will be traced. The scene of the final battle will be located upon the hill Armecy, according to the authority of Colonel Stoffel. His plan of the battlefield will also be used in working out the details of the battle.

Drawings of the battlefield will be made by the class; also a clay model showing the Helvetians making their attack upon the Romans drawn up in three lines upon the hillside.

The class will then discuss the effect of this battle upon the whole political and military situation.

History, Ninth, Tenth, and Eleventh Grades: (GUDRUN THORNE-THOMSEN.) The Peloponnesian War and Times of Alexander.

The last topic for study was the Age of Pericles; however great, this period inevitably led up to the Peloponnesian War and its disastrous consequences. The Persian War reveals the best aspects of Greek political institutions, the Peloponnesian War their tragic weaknesses.

Pupils will study causes which brought about this civil war, and its leading events.

Central idea: The Peloponnesian War as a conflict between two agonistic principles—oligarchy represented by Sparta, democracy by Athens.

Points for discussion:

1. What were the real issues in the war?

2. Reasons why Athens was defeated.
3. Did oligarchy triumph over democracy?
4. Effect of war on Greek states.
5. Changes in Athens and Sparta during this period.
6. How did the war pave the way for Macedonian interference in Greek affairs?
7. Political conditions in Greece during and after war. Decline of public spirit.
8. Hegemony of Thebes.
9. Character study of Alcibiades and Epaminandos.

The children will study about the rise of Macedon and the reign of Philip.

Points for class-work:

1. Policy of Philip in dealing with Greek states.
2. His purpose.
3. Character of Philip.
4. Why did the Greeks fail in their struggle with the Macedonians, when having been able to withstand the Persian invasion?
5. Read and discuss in class abstracts from the Philippics of Demosthenes. What principles did Demosthenes advocate? Story of his life.

Pupils will make themselves familiar with the life and conquests of Alexander.

On a blackboard map Alexander's campaign will be marked off, giving the march of his army, the main battles, and the cities founded by him; the geography of the countries traversed will be considered, and the character of the people as contrasted with that of the Greeks. By taking into consideration the geographical knowledge of the time, the children will appreciate the enormous difficulties of the campaign.

They will make a study of Alexander, and compare Achilles and Alexander. Some of the many stories and anecdotes illustrative of his boyhood and manhood will be related. Plutarch's *Lives* will be read in class. Alexander's greatness as a man, statesman, and soldier will be analyzed.

Points for discussion:

1. Principles underlying federal league under Macedonian supremacy.
2. Why did Alexander turn eastward rather than westward in his conquests?
3. By what motive was Alexander actuated?
4. What were his plans? Were they feasible?
5. Effect of Alexander's conquests on contemporary civilization; growth of Hellenism; effect upon industry and commerce of the time.
6. What was Alexander's work for civilization?

Having finished that period of Greek history which closes with Alexander, the pupils will consider some of the topics given in the outline for April.

Expression: Pupils will write papers on some of the topics given for discussion, also character studies of Alexander and Alcibiades.

Maps will be made showing Alexander's campaign.

Mathematics, Ninth and Tenth Grades: (GEORGE W. MYERS.)

EXPERIMENT NO. 33. To find distance from earth to sun by geometrical methods connected with transit of Venus observations.

(a) Observers are displaced in longitude.

Let S, V, and E denote the sun, Venus, and the earth, respectively.

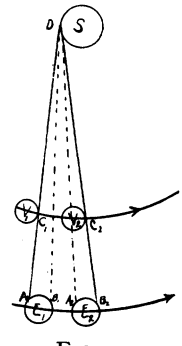

FIG. 30

When Venus is in line with the earth and sun, and between them, she is said to be in *inferior conjunction;* when in line, but beyond the sun, she is in *superior conjunction.* Observation shows that Venus requires 584 days to pass from either conjunction to the same conjunction again. This is the same as saying that it requires Venus 584 days to gain a complete revolution, or 360° on the earth. The

daily gain is accordingly $\frac{360}{8766}° = 37'$ (nearly); or 1′ 32″.5 per hour.

Two observers at stations A and B as far separated in longitude as possible on the earth; note the instant when Venus touches the solar disk. Of course, the easternmost observer at A_1 sees the beginning of the transit first. Venus moves onward in her orbit to V_2, when the western observer sees the first contact of Venus with the sun's disk. Evidently Venus, in the meanwhile, has gained the angle A_2DB_2 on the earth. If an observer were at D, this is the angle under which the chord A_2B_2 of the earth would be seen by him. If the observers at A and B are 6,060 miles apart in a straight line (and a former experiment has taught us how to compute this distance), and the angle is found to be 13″.2, since any magnitude must be 15,500 times its own dimension from the observer to open up 13″.2 at his eye (see Exp. No. 4), the distance to the sun DA (or DB) equals 15,500 × 6,000 = 93,000,000 miles. This exercise may be studied concretely by cutting out three wooden disks and attaching strings by light staples, carpet-tacks, or pins, as the lines are drawn in the cut.

Using the data of any table of planetary elements and substituting in the problem, work through and check the value of the distance from the earth to the sun.

(b) Observers displaced in latitude.

To obtain as long a base line as possible one observer should select a station as B in as high northern latitude as possible, and the other at C in as high southern latitude as possible. (EQ denotes equator.)

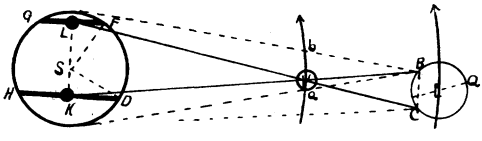

FIG. 31

To an observer at the northern station B, at the time of a transit, Venus will be seen projected on the disk of the sun, while she is crossing a cone whose vertex is at the observer, B, and whose elements are tangent to the sun's surface. Experiment No. 30 will show that Venus is at 0.72 of the earth's distance from the sun, so that the cone where Venus crosses it is only 0.23 of the solar diameter. The line ab, seen from B, is 32′.04″ on the average, *when the transit is central.* Seen from S, the line ab would then have the angular magnitude $\frac{23}{72} \times 32'.04'' = 10'\,14''.6$. (See under "a.") The hourly gain of Venus on the earth is 1′ 32″.5 on the average, and the duration of a transit of Venus, which is central, is then 6.64 hours. The duration of other transits will sustain such a ratio to 6.64 hours as the lengths of the chords of the solar disks traced by Venus's projection on the sun during transit sustain to the angular solar diameter 32′.04″.

This latter diameter is directly measurable in terms of angular units, and the chords traversed by the projection of Venus are readily computed from it.

If then viewed from C in high south latitude, Venus seems to describe a path such as FG, and from B a path such as DH, computing the times of transit with 6.64 hours, we find the ratio to 32′.04″ of the lengths of these arcs in angular value (SD and SF being 16′.02″). SK and SL are readily found by the Pythagorean Proposition.

[Note: GF is to $2SD$ as the time of transit along GF is to 6.64 hours.]

Angles BVC and DVF being equal, and BC and LK, or FD being supposed parallel, we have the triangles BVC and FVD similar; hence:

$$\frac{FD}{BC} = \frac{VB}{VS} = .\frac{23}{72}, \text{ or } FD = 0.35\ BC.$$

The observers B and C know their latitudes and longitudes and compute the length of BC. The line FD then becomes known in miles. Knowing, then, the length of FD in both degrees and miles, we compute, then, how many degrees and miles there are in LK and how many miles in SD, and we then have how many seconds one mile or 4,000 miles correspond to when seen over the distance from earth to sun. It is found that 4,000 miles viewed from the earth-sun distance would subtend an angle at the eye of 8″.8. But experiment No. 4 would show us that to make any magnitude open up 8″.8 at the eye it must be placed 23,250 × its own length from the observer. Hence the distance to the sun is 23,250 × 4,000 miles (roughly) = 93,000,000 miles.

Cut out two circular wooden disks such as BQC and $FGHD$, and fasten two strings with staples, one at B and D and the other at C and F. Running the strings through a bead at V, the problem may be made to stand out before the eye concretely. Globes will be better than disks if they are available.

EXPERIMENT NO. 14.5*. To measure the altitude of the sun.

Cut from inch stuff and surface two boards of dimensions shown in the cut. Square up one edge, *PN*, of the square board to an accurate right angle with the adjacent face *MNPO*.

By the aid of the wedges place the rectangular board horizontal (indicated by pouring a little water upon it), and then set the square board edgewise upon it and edgewise to the sun in such position as to make the shadow at *s* as narrow as possible. Stick a pin in face of the vertical board at *a* about 2″ from the edge *PN*. Now, stick a second pin at *b* so that its shadow shall fall upon that of pin *a*. Turn the board about so that edge *OP* shall be toward

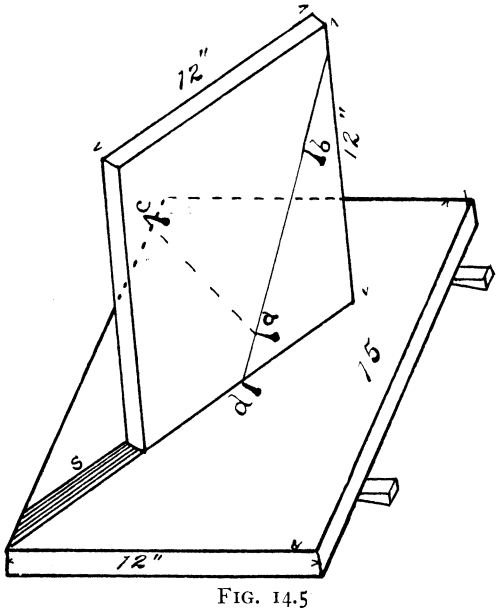

FIG. 14.5

the sun, and make the shadow *s* its narrowest again. Stick a third pin at *c*, as the pin *b* was placed formerly. Through the pin-marks draw the lines *ab* and *ac*, and with a protractor measure the angle *bac*. One-half of this angle will be the angular distance from the sun to the zenith for the mean of the times of sticking the pins at *b* and *c* respectively. Why?

Subtract this half angle from 90° and the difference will be the altitude of the sun above the horizon for the same time. Why?

One-half of the exterior angle *cad* will also be the altitude. Why?

EXPERIMENT NO. 14.6*. To construct a graph for the altitudes all day.

Let a number of students execute the foregoing experiment for eight, nine, ten, eleven, and twelve, one, two, three, and four o'clock. Work to nearest minute. Lay off the times on a horizontal line as shown in the figure, and the measured altitudes on vertical lines corresponding to the times, and draw a continuous line through the points thus located. Drawing any horizontal line, as A B, and bisecting it with a perpendicular, the intersection of the perpendicular with the curve will indicate the time by the clock used at which the sun's altitude was greatest.

By measuring the vertical distance from the horizontal line C D up to the curve we have the altitude for any time during the day.

The entire curve brings before the eye the law of the sun's variation of altitude for the day.

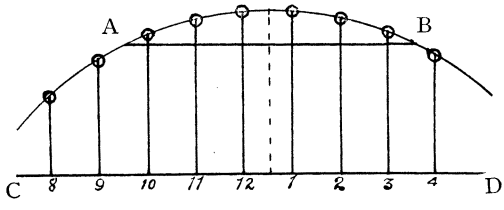

FIG. 14.6

Such curves, made at different seasons and compared, are instructive in many ways.

THE PRECESSIONAL GLOBE.

Description: *P*. The north pole of the heavens. *Q*. The north ecliptic pole. *R*. Brass circle with center at pole of ecliptic, radius, 23½°. *M*. Meridian graduated to degrees. *S*. Scale graduated on one edge to miles and on other to degrees. *T*. Thumb-screw to carry and clamp *S* along meridian. *H*. Wooden horizon, graduated. *E*. Equator. *C*. Ecliptic, and *D*, sliding support to *M*.

The circle *R* is perforated with 26 equally spaced holes, extending entirely around it, and around the south ecliptic pole is another precisely similar circle. At *P* is a pin, held in place by a spring, which may be set in any one of the 26 holes, a similar pin being first set in the diametrically opposite hole of the south pole circle.

Since the precessional motion carries the poles of the heavens around these circles once in 26,000 years, the spaces between adjacent holes corresponds to the motion of the poles during 1,000 years. It is therefore possible to bring the globe into such positions as to represent the aspect of the celestial motions about the instantaneous pole positions for any integral

*Experiments No. 14.5 and 14.6 are from Comstock's *Textbook of Astronomy*.

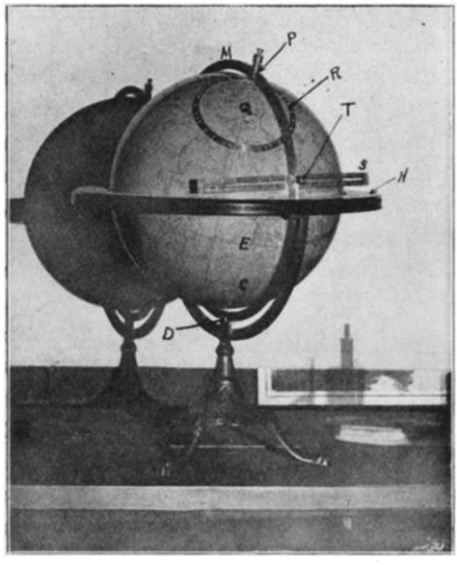

FIG. 32. PRECESSIONAL GLOBE.

number of thousands of years of the past or future. The positions of the poles for *any* epoch may be represented on this globe, while on an ordinary globe they can be represented for only a *single* epoch. The following important astronomical facts may be visualized by proper settings of the globe:

1. The revolution of the First of Aries through the signs of the zodiac.

2. The revolution of the celestial pole about the ecliptic pole.

3. Changes in the right ascensions and declinations of the stars.

4. Changes in the longitudes of the stars, but not in their latitudes.

5. The tropical year is shorter than the siderial year.

Exercises to be solved with the precessional globe.

EXPERIMENT NO. 34. To determine the Polestar at any given epoch.

(a) What star was nearest the north celestial pole when the great pyramid of cheops was built 6,000 (?) years ago?

(b) What star was nearest 1400 years ago? 1400 B. C.? 8500 B. C.? 14000 B. C.?

(c) When will Vega be the Polestar?

EXPERIMENT NO. 35. To draw the celestial equator at a given epoch.

This can be best done by means of the spherical blackboard fitted with the precessional circles.

Set the pole pins into the sockets corresponding to the epoch. Then with a crayon, or camel's-hair brush moistened with water-color, held against the O° of the meridian and touching the globe, roll the globe once around. If a number of equators for different epochs are thus drawn, the significance of the precession of the equinox becomes obvious.

Draw the equators for 500 B. C.; 10000 B. C.; and for 5000 A. D.

EXPERIMENT NO. 36. Find the right ascension and declination of stars for any epoch.

Set the pole pins to the given epoch as before, and bringing the star under the brass meridian, *M*, the declination may be read off directly.

For right ascensions elevate the celestial pole at an angle of 90° to the horizon. The horizon will then indicate the position of the celestial equator for that epoch. Now bring the poles of the ecliptic under the meridian, the north ecliptic pole being south of the north celestial pole. The point on the ecliptic coinciding with the east point of the horizon will then denote the first of Aries for the epoch. By means of the strip, *S*, read off along the horizon the number of degrees from the first of Aries to the brass meridian, *when the star has been brought under this meridian.* Dividing the number of degrees by 15 will give the right ascension in hours, minutes, and seconds.

(a) Find for the epochs 1000 A. D. and 10000 B. C. the right ascensions and declinations of the following stars: Arcturus, Aldebaran, Sirius, Procyon, Canopus.

EXPERIMENT NO. 37. To find the azimuths of stars at rising or setting for any required epoch.

Set the globe as before and rectify it for the latitude of the place of observation. Then bring the required stars to the eastern or western horizon according as the rising or setting azimuth is wanted. Read off the azimuth along the wooden horizon.

(a) Determine the azimuth at Thebes (Lat. $25^\circ 40'$ N.) of the Pleiades, Sirius, and Gamma Draconis and other stars, for 1000 B. C. and 3000 B. C.

(b) Repeat the above measures for the latitude of Chicago ($41^\circ 50'$).

French, Ninth and Tenth Grades: (LORLEY ADA ASHLÉMAN.) After the reading of *La Dernière Classe* and *Le Siège de Berlin*, the children of the Ninth and Tenth grades, in memorizing the little scene "d'un comique parfait," from *Don*

Juan, will not only have an entire change of style and thought, but will also have an opportunity to appreciate the spirit of French comedy.

In connection with their study of Molière, they will read also the accompanying anecdote, entitled *Molière le Père de la Comédie Française.*

Molière le Père de la Comédie Française

L'acteur anglais, Kemble, étant venue en France en 1800, fut invité par ses camarades français à un grand dîner. La conversation tomba naturellement sur le théâtre. On passa en revue les époques, les genres, et enfin les auteurs. Les Français, en gens bien élevés, payèrent à Shakespeare leur tribut d'hommages.

L'un d'eux, cependant, patriote avant tout, lança le nom de Molière. L'acteur anglais répondit froidement: "Molière n'est pas un Français." Etonnement de tous. "Expliquez-vous. Est-ce que par hasard Molière serait un Anglais?"

"Pas plus Anglais que Français."

"Mais alors?"

"Je me figure que Dieu dans sa bonté, voulant donner au genre humain le plaisir de la comédie, créa Molière, et le laissa tomber sur terre, en lui disant: 'Homme, va peindre, amuser, et si tu peux corriger tes semblables.' Il fallait bien qu'il descendît sur quelque point du globe, de ce côté du détroit ou bien de l'autre, ou bien ailleurs. Nous n'avons pas été favorisés; c'est de votre côté qu'il est tombé. Mais il n'est pas plus à vous qu'à personne; il appartient à l'univers."

Charade

Solution de la charade du mois de mai "passerau."

Comédie de Don Juan

[Cette scène excellente est d'un comique parfait: celle où Don Juan éconduit son débiteur M. Dimanche.]

Don Juan. Ah! monsieur Dimanche, approchez. Que je suis ravi de vous voir, et que je veux de mal à mes gens de ne vous pas faire entrer d'abord! J'avais donné ordre qu'on ne me fît parler à personne; mais cet ordre n'est pas pour vous, et vous êtes en droit de ne trouver jamais de porte fermée chez moi.

Monsieur Dimanche. Monsieur, je vous suis fort obligé.

Don Juan (*parlant à la Violette et à Ragotin*). Parbleu! coquins, je vous apprendrai à laisser monsieur Dimanche dans une antichambre, et je vous ferai connaître les gens.

M. Dimanche. Monsieur, cela n'est rien.

Don Juan. Comment! vous dire que je n'y suis pas, à monsieur Dimanche, au meilleur de mes amis!

M. Dimanche. Monsieur, je suis votre serviteur. J'étais venu—

Don Juan. Allons, vite, un siége pour monsieur Dimanche.

M. Dimanche. Monsieur, je suis bien comme cela.

Don Juan. Point, point, je veux que vous soyez assis contre moi.

M. Dimanche. Cela n'est point nécessaire.

Don Juan. Otez ce pliant, et apportez un fauteuil.

M. Dimanche. Monsieur, vous vous moquez; et—

Don Juan. Non, non, je sais ce que je vous dois; et je ne veux point qu'on mette de différence entre nous deux.

M. Dimanche. Monsieur—

Don Juan. Allons, asseyez-vous.

M. Dimanche. Il n'est pas besoin, monsieur, et je n'ai qu'un mot à vous dire. J'étais—

Don Juan. Mettez-vous là, vous dis-je.

M. Dimanche. Non, monsieur, je suis bien. Je viens pour—

Don Juan. Non, je ne vous écoute point si vous n'êtes assis.

M. Dimanche. Monsieur, je fais ce que vous voulez. Je—

Don Juan. Parbleu! monsieur Dimanche. Vous vous portez bien.

M. Dimanche. Oui, monsieur, pour vous rendre service. Je suis venu—

Don Juan. Vous avez un fonds de santé admirable, des lèvres fraîches, un teint vermeil et des yeux vifs.

M. Dimanche. Je voudrais bien—

Don Juan. Comment se porte madame Dimanche, votre épouse?

M. Dimanche. Fort bien, monsieur, Dieu merci.

Don Juan. C'est une brave femme.

M. Dimanche. Elle est votre servante, monsieur. Je venais—

Don Juan. Et votre petite fille Claudine, comment se porte-t-elle?

M. Dimanche. Le mieux du monde.

Don Juan. La jolie petite fille que c'est? Je l'aime de tout mon cœur.

M. Dimanche. C'est trop d'honneur que vous lui faites, monsieur. Je vous—

Don Juan. Et le petit Colin, fait-il toujours bien du bruit avec son tambour?

M. Dimanche. Toujours de même, monsieur. Je—

Don Juan. Et votre petite chien Brusquet, gronde-t-il toujours aussi fort, et mord-il toujours bien aux jambes les gens qui vont chez vous?

M. Dimanche. Plus que jamais, monsieur.

Don Juan. Ne vous étonnez pas si je m'informe des nouvelles de toute la famille; car j'y prends beaucoup d'intérêt.

M. Dimanche. Nous vous sommes, monsieur, infiniment obligés. Je—

Don Juan (*lui tendant la main*). Touchez donc là, monsieur Dimanche. Êtes-vous bien de mes amis?

M. Dimanche. Monsieur, je suis votre serviteur.

Don Juan. Parbleu! je suis à vous de tout mon cœur.

M. Dimanche. Vous m'honorez trop. Je—

Don Juan. Il n'y a rien que je ne fisse pour vous.

M. Dimanche. Monsieur, vous avez trop de bontés pour moi.

Don Juan. Et cela est sans intérêt, je vous prie de le croire.

M. Dimanche. Je n'ai point mérité cette grâce, assurément. Mais, monsieur—

Don Juan. Oh! çà, monsieur Dimanche, sans façon, voulez-vous souper avec moi?

M. Dimanche. Non, monsieur, il faut que je m'en retourne tout à l'heure. Je—

Don Juan (*se levant*). Allons, vite un flambeau, pour conduire monsieur Dimanche; et que quatre ou cinq de mes gens prennent des mousquetons pour l'escorter.

M. Dimanche (*se levant aussi*). Monsieur, il n'est pas nécessaire, et je m'en irai bien tout seul. Mais—

Don Juan. Comment? Je veux qu'on vous escorte, et je m'intéresse trop à votre personne. Je suis votre serviteur, et, de plus, votre débiteur.

M. Dimanche. Ah! monsieur—

Don Juan. C'est une chose que je ne cache pas, et je le dis tout le monde.

M. Dimanche. Si—

Don Juan. Voulez-vous que je vous reconduise?

M. Dimanche. Ah! monsieur, vous vous moquez! monsieur—

Don Juan. Embrassez-moi donc, s'il vous plaît. Je vous prie encore une fois d'être persuadé que je suis tout à vous, et qu'il n'y a rien au monde que je ne fisse pour votre service.

German, Ninth and Tenth Grades: (DR. SIEGFRIED BENIGNUS.) For exercises in grammar—especially in irregular verbs—in oral and written expression, the present condition of Greece will be studied.

Memorizing:

Das Lied der Deutschen

Deutschland, Deutschland über alles, über alles in der Welt,
Wenn es stets zu Schutz und Trutze brüderlich zusammenhält,
Von der Maas bis an die Memel, von der Etsch bis an den Belt—
Deutschland, Deutschland über alles, über alles in der Welt!

Deutsche Frauen, deutsche Treue, deutscher Wein und deutscher Sang
Sollen in der Welt behalten ihren alten schönen Klang
Und zu edler That begeistern unser ganzes Leben lang—
Deutsche Frauen, deutsche Treue, deutscher Wein und deutscher Sang.

Einigkeit und Recht und Freiheit für das deutsche Vaterland,
Danach lasst uns alle streben brüderlich mit Herz und Hand!
Einigkeit und Recht und Freiheit sind des Glückes Unterpfand—
Blüh'im Glanze dieses Glückes, blühe, deutsches Vaterland!

—Hoffmann aus Fallersleben, 1841.

Eleventh and Twelfth Grades

French, Eleventh and Twelfth Grades: (LORLEY ADA ASHLÉMAN.) Translation, clear, accurate, simple, adequate yet idiomatic, is not only the best test of the knowledge of both idioms, but it is a work of art as well as science, and of conscience too, disciplining the highest powers of insight, skill, and taste, both in thought and expression. As a training in the mother tongue, it is superior to all the devices of rhetoric. There is no other discipline incident to language-study so valuable as translation rightly conceived, yet there is nothing more harmful than those miserable verbal paraphrases which, under the utterly false name of "literal translation," are so often not only allowed but required.

Such a translation is false alike to the foreign and to the native language. Only idiom can translate idiom, or style translate style. It is only by doing our best that we can truly conceive the ideal and the unattainable.

The discovery of a family history of one of the pupils—a family history connected with one of the most exciting and tragic periods in French history—suggested the material for translation work.

A most interesting, true story will be given to the different French classes by translating the tale of the thrilling, romantic escape from the Bastile and final settlement in America of a man—the great-grandfather of one of the pupils—who, for loyalty to his king, was condemned to the guillotine.

Joseph Alexandre de Chabrier de Peloubet

Joseph Alexandre de Chabrier de Peloubet, l'ancêtre de la famille Peloubet aux Etats-Unis est né le quatre mars mil sept cent soixante quatre au Château de Peloubet à un mille de Lauzun, ville du Lot et Garonne, à mi chemin entre Bordeaux et Agnes.

Selon les régistres de la mairie, c'était le onzième enfant et le cinquième fils du noble Michel François de Chabrier, écuyer et sieur de Peloubet et de Madame Marguerite de Vendeuil, fille, selon son rapport du duc ou comte de Vendeuil.

Deux de ses frères servirent dans la grade du corps du Roi Louis XVI., mais Alexandre était trop court de taille pour y'être reçu, quoiqu'il s'adressât au roi pour obtenir l'appointement. N'ayant pas de succès de ce côté là, il s engagea comme correspondant dans la maison commerciale de Dubreuil et Dubret à Bordeaux, et il passa sa vie sur mer jusqu' à l'âge de vingt-neuf ans, mil sept cent soixante quatre, visitant les Indes Occidentales la plupart du temps.

La Révolution française éclata, et il retourna chez lui pour assister le roi contre la révolte d'un peuple aimant la liberté. L'âge avancé de

son père le décida à occuper une position neutre. Pendant quelque temps il évita le danger, plus tard il fut emprisonné dans la Bastille par les révolutionnaires. Il mourut à l'âge de quatre-vingt cinq ans.—MARGARET NORTON.

Pendant les trois années que Joseph Alexandre était dans l'armeé royale on dit qu'il a été engagé dans treize batailles. Sa division était à la frontière d'Allemagne quand le roi s'y trouvait. Dès que la nouvelle de sa mort leur arriva les soldats se dispersèrent sur le champ et on permit à chaque soldat de se trouver une place de sûreté.

Joseph Alexandre s'enfuit en Allemagne. Après quelque temps il retourna chez lui, sûr que l'excitation s'était calmée et qu'il serait en sûreté. Il se trompa, aprés n'avoir été avec sa famille que peu de temps il fut arrêté comme aristocrate et ami des royalistes. On le jeta en prison, il fut examiné et condamné à la guillotine.

Le jour était fixé pour son exécution. Elle devait avoir lieu au lever du soleil. Vers minuit, quelques heures avant le moment fatal le gêolier, probablement corrompu par des amis, vint à sa cellule et le conduisit silencieusement dans une grande chambre meublée d'une chaise et d'une table sur laquelle était une chandelle allumée. Ce changement s'était opéré si vite et si silencieusement qu'il lui semblait rêver. Revenant de sa surprise il était sûr qu'on proposait son évasion. Il chercha une parte secrète dans le mur, quelques planches détachées dans le plancher, mais en vain. S'asseyant sur une chaise il renonçait à tout espoir quand il lui arriva de regarder derrière la table.—JOHN NORTON.

Il la déplaça et trouva un trou dans le mur. Il s'y enfonça à corps perdu et tomba à terre, quelques dix pieds, se blessant un peu. Quand il se leva il trouva qu'il était hors de prison et bientôt il gagna la rue.

Il tressaillit quand un homme à cheval s'approcha et qu'il lui dit en passant, "Sous cet arbre là vous trouverez un cheval et un passeport." Il ne pouvait pas comprendre ce que cela voulait dire mais il se décida d'y aller. Sous l'arbre il trouva un passe-port, un cheval, et une charrette de colporteur. Sans recherche et délai il monta à cheval et se mit en route ne doutant plus que tout avait été arrangé pour lui. Il n'a jamais su à qui il devait son évasion, mais quand le soleil se levait qui devait être témoin de son exécution il était à une bonne distance de sa prison et bientôt sous la déguise d'un colporteur il était en Allemagne où il demeura plusieurs années. Pour son maintien il apprit à faire des instruments musicals, tels que la flute, le fifre, et le clairon, occupation qu'il continua pour la plus grande partie de sa vie.—ELSIE HENNE.

Mathematics, Eleventh and Twelfth Grades: (GEORGE W. MYERS.) This month will be given to a review of geometry, with especial emphasis upon applications. The shortness of the time which remains for this work will make possible little more than to point out the need for geometry in practical affairs, and to give an insight into the practical reasons for learning it.

So far as possible when a practical problem has been solved geometrically, the trigonometrical solution will also be given. Many of the exercises and problems will relate to the earth as a sphere, to topographic surveying, to astronomical and physical questions. The following headings will suggest the source from which the subject-matter will be largely drawn:

1. Theory of the sextant.
2. Theory of time and its determination.
3. The mathematics of triangulation.
4. Theory of the cylinder, cone, and sphere as applied in geography (map projection), architecture, and engineering (type forms).
5. Applications to earth, moon, and sun.
6. Theory of triangle, parallelogram, polygon, and polyhedron applied to the laws of force, and to the subject of center of gravity.
7. Review of abstract geometry with reference to these seven principles:
   (a) Equality by superposition (Congruency).
   (b) Inequality, how established.
   (c) Measurement of central and inscribed angles.
   (d) Theory of proportionality and of parallels.
   (e) Areas of plane figures all reduced to the triangle.
   (f) Principle of limits.
   (g) Reduction of solid, or space, geometry to plane geometry by analysis of figures.

The object of the review is to revive and bind together the trunk lines of thought

running through the subjects of geometry and trigonometry, and to give the pupils a respect, which lies close enough to their experience to make an appeal, for the power which comes to the one who makes the matter, method, and spirit of the subject his own. No hesitancy will be entertained by the teacher to emphasize the utilities of the subject from the fear of converting the admittedly beautiful logic of the subject into a sordid agency for personal gain, because while the thinker *should* be a practical man, the practical (not so-called) man *must* be a thinker.

Domestic Science, Eleventh and Twelfth Grades: (ALICE P. NORTON.) The work this spring has been a study of the house as one factor in the home. During the last week some time has been spent on the drawing of house plans and their discussion. Each member of the class has made the plan of a city or country house, or a city flat; these have been brought to the class, and talked over and criticised there, especially with reference to the adaptation of each to its situation and to the needs of the family who are to live in it, to its general convenience, and to the amount of light and sunshine which can enter it.

A visit has been made to a large apartment building in the city, so well planned that every room is lighted by an outside window. In this same building the class saw the plants for artificial refrigeration, and for heating and lighting the building.

One lesson has been spent in a walk on the Lake Shore Drive, with Mr. Duncan, studying the different styles of architecture to be found, and their adaptation to dwelling-houses. As most of the class know nothing of architecture, the next lesson will be pictures from the stereopticon, illustrating the historic styles; later various walks in the city will be taken, and the houses criticised not only from the point of view of style, but of adaptation to their purpose.

Some study will also be made of the furnishing of the house. Especial emphasis will be laid upon simplicity and the possibility of beautiful effects with a small expenditure of money. Each pupil will be asked to choose the colors and furnishings for a room, taking into consideration the lighting, proportions, and purpose of the room, and to make a drawing of it. Use will be made of these drawings in the kindergarten and grades.

Special topics, such as ventilation, heating, plumbing were assigned the pupils early in the quarter. These will be reported on and discussed, as far as time allows.

Chemistry, Eleventh and Twelfth Grades: (ALICE P. NORTON.) Work with the minerals has led to the further study of the metallic elements and to their industrial uses. The examination and identification of some iron pyrites, picked up on the lake shore during an excursion, began the study of the ores of iron and of its various compounds. The study of ferrous and ferric salts, and the oxidization of one to the other; the tests for iron, the examination of different substances (bluing, for example) for its presence; the removal of iron rust, and similar work, has given opportunity for both discussion and laboratory work. The iron industries, in which the class have expressed interest, will be considered next, and a visit will be made to some rolling mills.

Much of the time for this month will be spent upon the industrial applications of chemistry, and several field-trips will be made. On the other hand, the questions of the class are bringing out more fully than before some of the theoretical sides of the science.

Music. High School: (MISS PAYNE.) Songs: *Spring Song* (duet), Abt; *The*

Violet (duet), Songs of Life and Nature; *Voices of the Woods* (Rubinstein's Melody in F); *The Forge.* Voice work; exercises in the open vowel sounds, with sustained breath; scales and arpeggios, for ear and voice, with open vowel sounds; sight reading of new songs, with the difficult passages worked out on the scale tones.

Morning Exercises

JUNE	SUBJECT	LEADER
4.	Animal Life	Mr. I. B. Meyers.
5.	Summer Sports	Miss Crawford.
6.	Chivalry	Mr. Flint.
7.	Current Events	Miss Fleming.
11.	Magazine Illustration	Miss Hollister.
12.	Florence, The City Beautiful	Mrs. Flint.
13.	Kipling	Mr. Bass.
14.	Current Events	Miss Allen.
18.	June	Miss Van Hoesen.
19.	Flowers of France	Mlle. Ashléman.
20.	The Summer Solstice	Miss Baber.
21.	Current Events	Miss Champlin.

Historical Events and Birthdays

June	2	Dr. James Hutton	1726
"	4	George III.	1738
"	5	Socrates	468
"	6	Velasquez	1599
"	9	J. Howard Payne	1792
"	12	Harriet Martineau	1802
"	17	John Wesley	1703
"	19	Chas. Kingsley	1819
"	24	Henry Ward Beecher	1813